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FERMENTATION ACIDS

- *PRODUCTION*
- *PROPERTIES*
- *& UTILIZATION*

Technical Literature & Patents of the
U. S. Department of Agriculture

June 1960

Agricultural Research Service
UNITED STATES DEPARTMENT OF AGRICULTURE

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This bibliography extends and supersedes
one issued February 1952 as AIC-322,
entitled "The Production of Organic Acids
by Fermentation."

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FERMENTATION ACIDS

PRODUCTION, PROPERTIES, AND UTILIZATION

Technical Literature and Patents of the
U. S. Department of Agriculture

Compiled by

Mr. Robert G. Dworschack, Chemist in the Industrial Products
Investigations of the Fermentation Laboratory, Northern
Utilization Research and Development Division, Peoria, Illinois

Fermentation acids have many interesting properties and, consequently, are employed commercially for a variety of purposes. Their use continues to grow. The principal commercial acids--citric, gluconic, and lactic--are consumed in foods, pharmaceuticals, and industrial chemicals. Itaconic and 2-ketogluconic acids have been marketed in recent years. Itaconic is used in plastics and 2-ketogluconic in the manufacture of isoascorbic acid, an antioxidant for foods. Fumaric acid has been largely manufactured by chemical methods but can also be made by fermentation. Fermentative production appears to depend mostly on a sufficiently cheap source of carbohydrate. Still other members of the fermentation acid group are kojic, 5-ketogluconic, α -ketoglutaric, lactobionic, maltobionic, and pentonic acids for which extensive uses have not been developed. These acids can doubtless be made in quantity when commercial outlets are found.

The production of fermentation acids has been studied for many years all over the world and methods are now fairly well perfected for several of them. However, production of many potential members of the group remains to be studied in detail. Properties and utilization, of course, have been given attention but should receive a great deal more investigation. This applies not only to the acids that are on the market, but also to those that have not yet been developed commercially.

The United States Department of Agriculture has contributed many papers and patents relating to fermentation acids. A bibliography of USDA contributions, entitled "The Production of Organic Acids by Fermentation" was published in February 1952. This

compilation supplemented a chapter on "Fermentation Acids in Industry" written by Frank H. Stodola and Richard W. Jackson for the 1950-51 Yearbook of Agriculture, "Crops in Peace and War." Expanding interest in the field of fermentation acids led to the decision to bring the bibliography up to date and to extend its usefulness by including references on properties and utilization. The present bibliography lists technical papers and patents of the U. S. Department of Agriculture published up to July 1, 1959.

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